Docket No.: 62760B
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Ronald J. Weeks

Application No.: 10/528,610 Confirmation No.: 4031

Filed: March 21, 2005 Art Unit: 1711

For: POLYMER COMPOSITIONS FOR EXTRUSION COATING Examiner: Kevin R. Kruer

REVISED APPEAL BRIEF

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

As specified in the Notice of Non-Compliant Appeal Brief, this brief is filed within one month of the May 16, 2008 mailing date.

This brief contains items under the following headings as required by 37 C.F.R. § 41.37 and M.P.E.P. § 1206:

I. REAL PARTY IN INTEREST

The real party in interest for this appeal is:

Dow Global Technologies Inc.

II. RELATED APPEALS, INTERFERENCES, AND JUDICIAL PROCEEDINGS

There are no other appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

A. Total Number of Claims in Application

There are twenty-three claims pending in application.

B. Current Status of Claims

1. Claims canceled: 2, 10, 12, 21 and 23
2. Claims withdrawn from consideration but not canceled: none
3. Claims pending: 1, 3-9, 11, 13-20, 22 and 24-28
4. Claims allowed: none
5. Claims rejected: 1, 3-9, 11, 13-20, 22 and 24-28

C. Claims On Appeal

The claims on appeal are claims 1, 3-9, 11, 13-20, 22 and 24-28

IV. STATUS OF AMENDMENTS

Applicant did not file an Amendment After Final Rejection.

V. SUMMARY OF CLAIMED SUBJECT MATTER

As explained at page 1, lines 18-20 of U.S. Application Number 60/412,843 (all page and line numbers herein refer to said application), the present invention relates to new compositions of matter which result in a combination of desired processability properties with physical properties, as well as films made from such compositions. There are three independent claims pending in the present application: claim 1, claim 11 and claims 24.

Claim 1 of the present invention recites a polymer composition comprising a first component (A) together with a second component (B). The first component comprises 60-80 percent by weight of the polymer composition (page 1, line 22) and component (B) comprises 20 to 40 percent by weight of the polymer composition (page 1, line 25).

Component (A) is itself a mixture of two components, a homogeneously branched polyethylene and a heterogeneously branched polyethylene (page 1, lines 23-24). Homogeneously branched polyethylene and heterogeneously branched polyethylene are sometimes referred to as linear polyethylene or "LLDPE". The homogeneously branched component comprises 40 to 75 weight percent of component (A) (page 4, line 22) and the heterogeneously branched polyethylene comprises from 25 to 60 weight percent of component (A) (page 4, lines 23-24).

Component (B) is a low density polyethylene polymer (page 5, lines 1-2) having a melt strength at least twice (page 1, line 26) that of component (A). Low density polyethylene is often referred to as "LDPE".

Claim 11, is a film layer made from the composition described above. Claim 24, is a multi-layer film in which at least one of the layers is a film layer made from the composition described above.

Claim 25, is a composition of matter similar to claim 1 except that component A is characterized as an ethylene polymer having at least three melting peaks on a differential scanning calorimetry curve (page 4, lines 32-33; also page 5, lines 9-14).

Claims 7 and 17, depend from claim 1 or 11 respectively, but add the recitation that component A is characterized as an ethylene polymer having at least three melting peaks on a differential scanning calorimetry curve (page 4, lines 32-33).

Claims 26 and 27 depend from claims 7 and 17 respectively, but add the recitation that component A is characterized as an ethylene polymer having only three melting peaks on a differential scanning calorimetry curve (page 5, lines 9-14).

VI. GROUNDS OF OBJECTION TO BE REVIEWED ON APPEAL

Whether claims 1, 3-9, 11, 13-20, 22, and 24-28 are patentable under 35 USC § 103 over Chum et al (US5,667,383) in view of Bamburger et al (US6,384,158).

VII. ARGUMENT

Claim 1 is not made obvious in light of art cited by Examiner

The first and leading Supreme Court interpretation of 35 U.S.C. 103(a) is found in the 1966 decision in *Graham v. John Deere*, 383 U.S. 1 (1966). The decision in *Graham,* as interpreted by the Federal Circuit, mandates three separate factual inquiries in a determination of the obviousness of an invention:

a) the scope and content of the prior art reference;

b) the differences between the prior art reference and the claims at issue; and

c) the level of ordinary skill in the pertinent art.

Graham, 383 U.S. at 17–18. The obviousness or non-obviousness of the subject matter claimed is determined against the background of the results of these three factual inquiries. Additionally, when applying 35 U.S.C. 103, the following tenets of patent law must be adhered to:

A) The claimed invention must be considered as a whole;

B) The references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination;

C) The references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention; and

D) Reasonable expectation of success is the standard with which obviousness is determined.

Hodosh v. Block Drug Co., Inc., 78 F.2d 1136, 1143 n.5 (Fed. Cir. 1986).

Further, the legal concept of *prima facie* obviousness is a procedural tool of examination that applies broadly to all arts. It allocates who has the burden of going forward with production of evidence in each step of the examination process. *See, e.g., In re Rinehart*, 531 F.2d 1048, 189 USPQ

143 (CCPA 1976); *In re Linter*, 458 F.2d 1013, 173 USPQ 560 (CCPA 1972). To establish a *prima facie* case of obviousness, three basic criteria must be met:

A) There must be some suggestion or motivation to modify the reference;

B) There must be a reasonable expectation of success; and

C) The prior art reference must teach or suggest all claim limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on appellant's disclosure. *In re Vaeck*, 947 F.2d 488 (Fed. Cir. 1991). As will be shown below, the Examiner has failed to note a *prima facie* showing of obviousness with respect to each of these criteria.

The primary reference used by the Examiner to support his obviousness rejection is US 5,667,383 to Chum et al. ("Chum"). Chum teaches blends of 5 to 95 weight percent of a homogeneously branched polyethylene together with 95 to 5 weight percent of a heterogeneously branched polyethylene. Chum also teaches specific examples ranging from 43% of the homogeneously branched polyethylene to 75%, with the balance consisting of the heterogeneously branched polyethylene. This admittedly falls within the description of component (A) in the present claims. However, Chum does not teach combining its mixture with other resins, and in particular there is no teaching or suggestion to add the mixture of Chum to a low density polyethylene having a melt strength at least twice that of component (A).

US 6,384,158 to Bamburger et al. ("Bamburger") is therefore cited by the Examiner for the proposition that it is common practice to add LDPE to linear polyethylene, and thus that it would be obvious to modify the resins of Chum by adding LDPE. At column 1, lines 50-53, Bamburger does state that it is common practice to add low levels of LDPE to a linear polyethylene to increase melt strength, to increase shear sensitivity and to reduce the tendency to melt fracture. However, Bamburger goes on to state that "these blends [of linear polyethylene with low levels of LDPE] have poor mechanical properties as compared with neat [linear polyethylene]" (see Bamburger, Col. 1, lines 54-55). Indeed, the reference in Bamburger to combining LDPE with LLDPE is presented as a problem to be solved. Given this express teaching away from using LDPE, it is therefore respectfully submitted that the Examiner has not made a *prima facie* showing of obviousness as there is clearly no reasonable expectation of success.

Moreover, Bamburger specifically recites that the LDPE in such applications is to be added at <u>low</u> levels. In the present claims, from 20 to 40 percent of LDPE is required. It is respectfully submitted that a person of ordinary skill in the art would not consider 1/5 to 2/5 of the total amount to be <u>low</u> levels, particularly in light of the teaching that LDPE harms mechanical properties. Additionally,

there is no teaching in Bamburger that the LDPE should be chosen to have at least twice the melt strength of the LLDPE portion as recited in claim 1.

Therefore even if, for the sake of argument, the teachings of Bamburger were combined with Chum, it would not result in a composition reciting all of the elements of claim 1. Accordingly, as the prior art references do not teach or suggest all claim limitations, the Examiner has again failed to make a *prima facie* showing of obviousness.

In the Office Action dated March 8, 2007, the Examiner has stated at page 4, that "it would have been obvious to one of ordinary skill in the art at the time the invention was made to [sic, add] sufficient amounts of LDPE to the LLDPE composition taught in Chum. The motivation for doing so would have been to improve the melt strength of the composition." Improved melt strength is not a universally desired characteristic, as acknowledged by the Examiner (see 8/23/07 Office Action, page 3). It is not clear why a person of ordinary skill in the art would have sought to improve the melt strength of Chum's resins, particularly as Chum states at columns 9 and 10 that its blends, by themselves, are already suitable for film and film structures as well as extrusion coating applications. Accordingly, as the Examiner has failed to show that there is some suggestion or motivation to modify the primary reference, the Examiner again has failed to make a *prima facie* showing of obviousness.

More importantly, however, as previously discussed, Bamburger itself states that it is also known that addition of LDPE harms mechanical properties. Thus, it is not clear why a person of ordinary skill in the art would disregard Bamburger's warning that even low levels of LDPE harm mechanical properties in order to increase the melt strength of Chum's resins which are presented as already having sufficient melt strength for film and extrusion coating applications. In picking and choosing which aspects of the cited prior art to read and which to ignore, the Examiner appears to have undertaken a hindsight reconstruction of the Appellant's claims in contravention to the Federal Circuit's guidance in Ecolochem, Inc. v. Southern Cal. Edison Co., 227 F.3d 1361, 56 U.S.P.Q.2d (BNA) 1065, 1072 (Fed. Cir. 2000).

Claims 11 and 24

Claim 11 adds that the same composition as described in claim 1 makes up a film layer. Claim 24 recites that the same composition as described in claim 1 makes up at least one layer in a film comprising at least two layers. Thus the rejections of these claims based on Chum and Bamburger are improper for the same reasons as described above.

Claims 7, 17, 25, 26 and 27 contain additional recitations which are not made obvious by the art cited by Examiner

Independent claim 25 and dependent claims 7, 17, 26, and 27 all contain a recitation that the mixture (A) is characterized by having a differential calorimetry curve having at least 3 peaks (and in the case of claims 26 and 27, only 3 peaks). As explained at page 5, lines 9-14 of the present application (as published as WO 2004/026955), the different components of the mixture as evidenced by the different peaks contribute to different properties of the final composition. The highly desirable balance of properties achieved by the Appellant benefits from the contribution of each component in the mixture (A) as well as component (B). This aspect of the invention is not taught by Chum or Bamburger, although it may be possible that some of the blends of Chum recited in the example would inherently possess this characteristic.

Claims 3-6, 8-9, 13-16, 18-20, 22, and 28

Appellant respectfully submits that the remaining dependent claims are not separately patentable over the claims from which they depend, and thus no separate arguments will be proffered on their behalf. Accordingly, these claims stand or fall together with Claim 1.

VIII. CLAIMS

A copy of the claims involved in the present appeal is attached hereto as Appendix A.

IX. EVIDENCE

None

X. RELATED PROCEEDINGS

None

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APPENDIX A

Claims Involved in the Appeal of Application Serial No. 10/528,610

1. A polymer composition comprising

(A) from 60 to 80 weight percent of a mixture of at least one homogeneously branched polyethylene and at least one heterogeneously branched polyethylene wherein the mixture of (A) comprises from 40 to 75 weight percent of the homogeneously branched polyethylene and from 25 to 60 weight percent of the heterogeneously branched polyethylene.and

(B) from 20 to 40 weight percent of at least one low density polyethylene polymer having a melt strength at least twice that of mixture (A).

3. The composition of claim 1 wherein the homogeneously branched polyethylene is an interpolymer of ethylene and at least one C_3-C_{20} alpha-olefin.

4. The composition of claim 1 wherein the heterogeneously branched polyethylene has a molecular weight distribution, Mw/Mn, from 3 to 6.

5. The composition of claim 1 wherein the mixture of (A) has a melt index, I_2 (ASTM D-1238 condition 190°C/2.16 Kg), from 10 grams/10 minutes to 30 grams/10 minutes.

6. The composition of claim 1 wherein the mixture of (A) has a density (ASTM D-792) of from 0.88 grams/cubic centimeter to 0.92 grams/cubic centimeter.

7. The composition of claim 1 wherein the mixture of (A) has at least 3 melting peaks on a differential scanning calorimetry curve.

8. The composition of claim 1 wherein the homogeneously branched polyethylene has a molecular weight distribution, Mw/Mn, from 1.5 to 3.

9. The composition of Claim 1, wherein the mixture of (A) comprises from 50 to 60 weight percent of the homogeneously branched polyethylene and from 40 to 50 weight percent of the heterogeneously branched polyethylene.

11. A film layer made from a polymer composition, the composition comprising

(A) from 60 to 80 weight percent of a mixture of at least one homogeneously branched polyethylene and at least one heterogeneously branched polyethylene wherein the mixture of (A) comprises from 40 to 75 weight percent of the homogeneously branched polyethylene and from 25 to 60 weight percent of the heterogeneously branched polyethylene and

(B) from 20 to 40 weight percent of at least one low density polyethylene polymer having a melt strength at least twice that of mixture (A).

13. The film layer of claim 11, wherein the homogeneously branched polyethylene is an interpolymer of ethylene and at least C3-C20 alpha-olefin.

14. The film layer of claim 11, wherein the heterogeneously branched polyethylene has a molecular weight distribution, Mw/Mn, from 3 to 6.

15. The film layer of claim 11, wherein the mixture of (A) has a melt index, I_2 (ASTM D-1238 condition 190°C/2.16 Kg), from 10 grams/10 minutes to 30 grams/10 minutes.

16. The film layer of claim 11, wherein the mixture of (A) has a density (ASTM D-792) of from 0.88 grams/cubic centimeter to 0.92 grams/cubic centimeter.

17. The film layer of claim 11, wherein the mixture of (A) has at least 3 melting peaks on a differential scanning calorimetry curve.

18. The film layer of claim 11, wherein the homogeneously branched polyethylene has a molecular weight distribution, Mw/Mn, from 1.5 to 3.

19. The film layer of claim 11, wherein the mixture of (A) comprises from 50 to 60 weight percent of the homogeneously branched polyethylene and from 40 to 50 weight percent of the heterogeneously branched polyethylene.

20. A fabricated article comprising the film layer of claim 11.

22. The film layer of claim 11 further comprising at least one other layer.

24. A film comprising at least two layers, one layer being made from a polymer composition, the composition comprising:

(A) a mixture of at least one homogeneously branched polyethylene and at least one heterogeneously branched polyethylene wherein the mixture of (A) comprises from 40 to 75 weight percent of the homogeneously branched polyethylene and from 25 to 60 weight percent of the heterogeneously branched polyethylene and one other layer comprising

(B) at least one other low density polyethylene polymer having a melt strength at least twice that of the mixture of (A).

25. A polymer composition comprising

(A) from 60 to 80 weight percent of an ethylenic polymer having at least three melting peaks on a differential scanning calorimetry curve and

(B) from 20 to 40 weight percent of at least one low density polyethylene polymer having a melt strength at least twice that of (A).

26. The composition of claim 7 wherein the mixture of (A) has only 3 melting peaks on a differential scanning calorimetry curve.

27. The film layer of claim 17, wherein the mixture of (A) has only 3 melting peaks on a differential scanning calorimetry curve.

28. The composition of Claim 1 wherein the homogeneously branched polyethylene has a composition distribution branching index between 80 and 100.

APPENDIX B

Evidence:

None

APPENDIX C

Related Proceedings:

None